

REMARKS/ARGUMENTS

The present amendment is submitted in an earnest effort to advance the case to issue without delay.

Claims 1-4 and 7-10 were rejected under 35 U.S.C. § 112, second paragraph. The term "spring device" in line 18 was said to have insufficient antecedent basis. Claim 1 has been amended to identify the term as "spring system" which is believed to correct this informality.

Claim 1 has been further amended to include features found in original claims 7 and 10. Additional support is found within paragraph [0007] and [0021].

Claim 2 has been amended by replacing "4" with "5". Support is found in the Table after paragraph [0041].

Claims 1-2 were rejected under 35 U.S.C. § 103(a) as unpatentable over "applicant's admission to the Prior Art (APA)" as disclosed in claim 1 in view of U.S. Patent 5,782,621 (Harris). Applicant traverses this rejection.

Certain types of commercially available mechanical pump devices were found by applicant to have problems in the delivery of compositions containing surfactants. Careless handling of the pump package by consumers often results in liquid entering the mechanism of the pump through a vent hole. Once within the air chamber of these pumps, some of the liquid product will be trapped. This triggers solubilization by the surfactant of lubrication oil found on the piston to assist movement. Once a substantial amount of the lubrication oil has been removed through surfactant solubilization, the

piston begins to stick or at least operate inefficiently. Another phenomena of the undesirable solubilization is the liquid product absent aeration dribbles from the mouth of the exit nozzle rather than being expressed as a foam.

Applicant evaluated a variety of measures to overcome the problem. Most successful has been the re-engineering of the spring system. A series of springs having different Spring Return Force were tested for their potential of removing piston stickage. See the experiments under paragraph [0041]. Applicant discovered that a force greater than 4 lbs. would overcome piston stickage.

Harris was cited for disclosing use of a spring (7) having a return force of greater than 4 pounds. The Examiner considered that this teaching would obviously be applied to substitute the spring of the APA.

Unlike the present invention, Harris describes a pump not intended to deliver any liquid product. The device of Harris is a medical implement, i.e. a pump to assist penile erection. Anyone skilled in developing consumer cosmetic products such as foam dispensing articles would not look toward this reference in the medical arts. Not only is the end-use different, but the mechanisms are so different from the "APA". For instance, Harris does not disclose a reservoir for receiving a liquid product. Neither is there an operating unit for dispensing foam as an air-liquid mixture. A combined air and liquid pump is also absent from the reference device. Other than a spring and piston, there is absolutely no relationship between the "APA" and the Harris disclosure.

Claims 1-2 and 9 were rejected under 35 U.S.C. § 103(a) as unpatentable over U.S. Patent 5,443,569 (Uehira et al.) in view of U.S. Patent 5,782,621 (Harris). Applicant traverses this rejection.

Uehira seeks to provide a foam dispensing pump container capable of dispensing the desired foam when operated slowly. Resolution of this problem resides in the initial fabrication of the pump. See column 3 (lines 1-8) and column 4 (lines 37-49). This problem is unlike the one faced by the present applicant. Certainly the primary reference has not traced the problem of piston stickage to a lubricant that has been dissolved through action of the surfactant ingredient in a liquid product dispensed by the pump. Neither is there any mention of a solution for applicant's problem. Particularly there is no mention in the reference for use of a spring system of the recited return force greater than 4 pounds.

Harris as previously noted discloses a medical device for erectile impotence. By contrast, the primary reference and that of applicant's invention is focused upon a foam forming pump to dispense a liquid product. No foam or liquid product is expressed in the medical device of Harris. Neither does Harris disclose many of the mechanical aspects required by the claims and necessary for analogy to the primary reference. The penile erection mechanism does not include a liquid pump, a reservoir for liquid product nor a screen device to generate foam. Anyone skilled in the art seeking to overcome the problem of dispensing a foam in a slowly operated pump would find no resistance from Harris. In a hindsight reconstruction, the Examiner has selected a feature from Harris to incorporate into Uehira. This selection disregards any analogy of problem to be solved or mechanical structure. These two references are simply "thrown together".

Claims 3-4 were rejected under 35 U.S.C. § 103(a) as unpatentable over U.S. Patent 5,443,569 (Uehira et al.) in view of U.S. Patent 5,782,621 (Harris et al.), and further in view of U.S. Patent 2,515,328 (Bobrick). Applicant traverses this rejection.

Bobrick does not remedy the basic deficiencies of Uehira et al. in view of Harris, *vide supra*. Bobrick was introduced as teaching use of an outer spring (G) with an air cylinder (4).

Bobrick has the primary object to provide a lather making dispensing valve to which a liquid soap may be fed by gravity and mixed with air for producing a lather. See column 1 (lines 26-30). Nothing is revealed with respect to using spring (G) to counter piston stickage. Neither is there any mention of a problem wherein lubricant is stripped by surfactant action of errant liquid product entering an area of the air pump. There is also no disclosure with respect to the importance of a spring system (in this case the combined springs E and G) that must have a combined return force greater than 4 pounds. Again the Examiner has merely selected a feature of the prior art without consideration as to reasons why anyone skilled in the art would combine Uehira, Harris and Bobrick. Those skilled in the art would certainly not obviously combine these references to achieve the presently claimed invention.

Claims 7-8 and 10 were rejected under 35 U.S.C. § 103(a) as unpatentable over U.S. Patent 5,443,569 (Uehira et al.) in view of U.S. Patent 5,782,621 (Harris et al.), and further in view of U.S. Patent 4,615,465 (Grothoff). Applicant traverses this rejection.

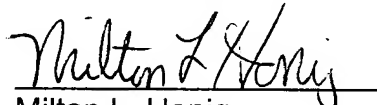
Grothoff was cited as teaching the use of a lubricant on an inner surface of a pump chamber. This reference also requires the presence of a specific type of surface-active material. The latter is used in a positive sense to assist the lubricant (particularly in concentrated form) to retain lubricant on cylinder wall surfaces. See column 5 (lines 22-29). Indeed, this is the basic invention of Grothoff. This stands in stark contrast to the present invention. Applicant has found that surfactant is detrimental to the lubricant

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in a foam dispensing device of structure as recited by the present claims. When the dispenser is inappropriately operated, surfactant from the liquid product leaches out lubricant resulting in piston stickage. Grothoff teaches the benefit of surfactant (which may be appropriate to his particular pump). It is clear that Grothoff teaches away from applicant's discovery. Anyone skilled in the art following Grothoff would apply a surfactant to a piston (of the primary references) and thereby not solve but actually aggravate stickage.

In view of the foregoing amendment and comments, applicant requests the Examiner to reconsider the rejection and now allow the claims.

Respectfully submitted,


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